Washington State Department of Health

Environmental Health Programs
Division of Drinking Water

Greywater Reuse

Why Reuse Greywater?

The stimulus to reuse greywater is driven by individuals and utilities trying to conserve water and reduce demands on existing water and wastewater systems. Individuals see using greywater as something they can do to reduce water consumption and reuse (recycle) a resource. Water and wastewater utilities are looking at greywater reuse for water conservation and possibly reducing sewer flows to delay infrastructure improvements or capacity issues.

The legislature has been interested in greywater reuse for several years and has required DOH to study the possibility for reuse with a report to them concerning this option. DOH used a consultant to study greywater reuse and the final recommendation was to use greywater guidelines contained within the recently revised Uniform Plumbing Code (UPC) and data from California's drought experience. The legislature modified RCW 43.20 (State Board of Health) in 1993 to require DOH to work with individuals and technical groups to develop greywater standards. There is also a bill before the 1997 legislature to further enhance and direct DOH to develop and permit greywater systems.

Greywater Standards Development

The greywater standards development will use a new process with two parallel tracks to: 1) develop and refine final greywater standards, and 2) facilitate pilot projects for testing this technology in Washington. The final greywater standards and guidelines will be developed by the Department and the Technical Review Committee (TRC) as established within the on-site waste rules (WAC 246-272). Interim greywater standards are ready now to be issued for municipally managed pilot projects. The municipal oversight feature together with greywater pilots will allow DOH to refine the standards with actual data from Washington. This pilot project based process is currently working with the reclaimed water standards for municipal wastewater.

Key elements of the interim greywater standards are:

- shallow narrow trenches which can use gravity or pressure to distribute the greywater;
- interceptor tanks used to briefly store and equalize greywater flow for irrigation or demand management use;
- loading rates, vertical separation and minimum land area requirements similar to on-site waste rules and consistent with local rules; and
- allowance for innovative technology such as sub-surface drip and proprietary equipment to better utilize and distribute the greywater.

The final greywater standards will utilize the experience from the interim standards and review of the implementation and permitting experience from the pilot projects. To facilitate coordinated implementation, final standards will not be released until technical assistance and training is available for local health jurisdictions and on-site design and installation practitioners.

Regulatory Issues

Permitting of greywater systems will be performed by local and state health jurisdictions through the on-site waste rules (WAC 246-272). On greywater systems with municipal oversight, local health jurisdictions may delegate some of the permitting functions to the municipality. This is at the discretion of the local health jurisdiction.

Minimum land area calculation for greywater will require using a ratio system to estimate adequate minimum land to protect water quality and to assure disposal can occur. An example of this ratio would be a 15,000 sq./ft. lot required area for a loamy sand soil and a 5,000 sq./ft. urban lot for a municipal greywater system (same soil type). The on-site rules allow a single family residence or a unit volume of sewage (450 gallons) within the 15,000 sq./ft. area. The urban lot for the greywater system is 1/3 of the size. In this example, 150 gallons of greywater (calculated as 1/3 of a unit volume of sewage) would be allowed to be reused on the urban lot.

Where urban lots under a municipal pilot project are connected to public sewer, a 100% reduction in reserve area is the only departure from standard on-site rule procedure. The sewer connection is a fail safe reserve area.

All other state and local rules will apply to greywater systems.

What is the status?

Interim greywater standards have been reviewed by the TRC and are ready for municipal pilot projects. Two municipalities in western Washington are interested in piloting greywater systems. DOH will provide technical assistance to the local health jurisdictions in these areas and help facilitate the pilots with the municipalities. The Drinking Water Division is the lead for the municipal pilot program. The Office of Community Environmental Health, Wastewater Management Section, will be developing the final greywater standards. For more information please contact:

George Schlender, Drinking Water Program, 1500 W 4th Ave., Suite 305, Spokane WA 99204, (509) 456-2490, e-mail - gss0303@hub.doh.wa.gov

Richard Benson, Wastewater Management Section, 1500 W 4th Ave., Suite 305, Spokane WA 99204, (509) 456-6177, e-mail - rmb0303@hub.doh.wa.gov